

REMARKS

Claims 30-32 currently are pending. Claims 30-32 have been amended. 1-3, 5-23, 25 and 28, 29, and 33-35 have been canceled as directed to non-elected subject matter. Applicants may reinstate these claims at a later time or file divisional applications.

The restriction requirement has been made final by the examiner. Applicants further traverse this requirement. PDAT enzyme of the present invention according to SEQ ID NO: 2 is characterized through a lipase motif of the conserved sequence string FXKWVEA. SEQ ID NO: 6 (*Arabidopsis thaliana*), SEQ ID NO: 13 (*Schizosaccharomyces pombe*) and SEQ ID NO: 17 (*Arabidopsis thaliana*) inherently contain the identical lipase motif FXKWVEA. This is the bracket which enclose the cited sequences.

The examiner stated that the instant application requests the benefit of priority for the foreign application 99106656.4 filed in Europe on April 1, 1999 in the declaration. A foreign document has been received but it is not an official, ribboned copy.

In response, applicants herein submit a copy of a returned post card with the OPIE stamp dated October 5, 2001 which states that a certified copy of EP 99106656.4 was received.

The examiner stated that the oath filed on December 4, 2000 did not have the post office address cited for inventor Dahlqvist or inventor Stymme as required by MPEP 602 and 37 CFR 1.63. In response, applicants submit the original application data sheet with

an addendum which states the inventors' post office addresses.

The examiner stated that the drawings are considered informal for the reasons detailed in the copy of PTO form 948. In response, applicants herein submit corrected drawings which are in compliance with the rules.

The examiner stated that applicants have not disclosed the two oligonucleotides on page 13, line 8. In response, applicants herein submit a replacement sequence listing which discloses these two oligonucleotides.

The specification was objected to for lacking complete continuity data in the first paragraph. Applicants amend the first paragraph of the specification to include the correct complete continuity data.

The examiner believes the description of sequences and description of figures should be moved to follow the Summary of the Invention. In response, applicants move the contents of pages 30-37 to the suggested location. Also, applicants follow the examiner's suggestion to have the section beginning with "General Methods" on page 12 titled as—Detailed Description of the Invention—.

As suggested by the examiner applicants replace the title of the invention with:—Methods of Making Triacylglycerol using Phospholipid:Diacylglycerol Acyltransferase—.

Applicants believe the present abstract of the disclosure is sufficient as the present invention relates to a new class of enzymes in the biosynthetic pathway for the production of triacylglycerol and recombinant molecules encoding these enzymes.

The examiner stated that the specification is confusing because SEQ ID NO: 12

and 18 are described as an amino acid sequence. Applicants refer to the amino acids encoded by the DNA sequences according to SEQ ID NOs: 12 and 18.

The examiner objected to claims 30-32 for containing non-elected subject matter because claim 7 is not limited to the elected sequences, SEQ ID NOs: 1 and 2 from *S. cerevisiae*. Applicants amend claims 30-32 so that they are now directed to elected subject matter.

Claim 30 is rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For clarification applicant amend claim 30 to read "...transgenic cell or transgenic organism..."

Applicants believe "uncommon" fatty acids would be clear to one of ordinary skill in the art. Applicants believe some latitude in claim language should be allowed by the examiner.

Applicants delete "preferably" in claim 31.

Claim 32 has been amended to include a definite step.

Claims 30-32 are rejected under 35 USC § 112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 30-32 are rejected under 35 USC § 112, first paragraph, because the specification, while being enabling for methods of

making triacylglycerol using a host organism transformed with a gene encoding PDAT from *S. cerevisiae* (SEQ ID NO: 1), does not reasonably provide enablement for methods using any gene encoding any PDAT from any source absent any structural limitations.

Applicants limit the present claims to "... SEQ ID NO: 1 from *S. cerevisiae* or a DNA encoding SEQ ID NO: 2, such as 95% identical to SEQ ID NO: 1..." Applicants believe these amendments overcome the 35 USC § 112, first paragraph rejections.

The examiner's 35 USC § 101 rejections are improper, applicants believe, the claims described transfected or transformed organisms which do not naturally exist and are products of the hand of man.

Claims 30 and 32 are rejected under 35 USC § 102 (b) as being anticipated by Yu et al. because Yu et al. teach expression of human ACAT and as taught by Dahlqvist et al., yeast cells inherently contain and express a PDAT gene and inherently produce TAG; thus, the expression of any gene in transgenic yeast meets all the limitations of claim 30.

In response, applicants point out that Yu et al. disclose an Acyl-CoA: Sterol Acyltransferase. In contrast, the present invention relates to use of a type of genes encoding a previously undescribed type of enzymes (PDAT), whereby this enzyme catalyzes an acyl-CoA-independent reaction. Also, Yu et al. use the same or similar yeast strains, but there is no evidence that the genes of the present invention are used. This is demonstrated by the fact (examples on page 18, line 30) that yeast PDAT do not have cholesterol ester synthesizing or phospholipase activities.

Dahlqvist et al. was published on June 6, 2000, meaning more than one year after the claimed priority of April 1999.

Claims 31 is rejected under 35 USC § 103(a) as being unpatentable over the combination of Verhasselt et al. and Zou et al.

In response, applicants point out that Verhasselt et al. disclose an ORF N2042 from *Saccharomyces cerevisiae* which has an identity according to FASTA of only 25.1% of a human phosphatidylcholine-sterol-O-acyltransferase precursor. This acyltransferase is not acyl-CoA-independent. Zou et al. teach an increased fatty acid production by overexpression of various acyltransferases. Therefore, a person of ordinary skill in the art would not be motivated to combine the above references because there is no hint of a method of producing triacylglycerol with the claimed sequences.

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Respectfully submitted,  
KEIL & WEINKAUF

A handwritten signature in black ink, appearing to read 'Daniel S. Kim', written over the printed name.

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